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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/674,530

10/01/2003

Chandra Bontu

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EXAMINER

PHAN, HANH

ART UNIT

PAPER NUMBER

2613

DATE MAILED: 11/01/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/674,530

Applicant(s)

BONTU, CHANDRA

Examiner

Hanh Phan

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 October 2003.
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-36 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1,2,4-18 and 27-36 is/are rejected.
7) ☒ Claim(s) 3 and 19-26 is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Drawings

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the feature “**an electrical filter**” specified in the claim 16 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as “amended.” If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either “Replacement Sheet” or “New Sheet” pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 4-10 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

-Regarding claims 4 and 8-10, claims 4 and 8-10 claim both an apparatus and the method steps of using the apparatus is indefinite under 35 U.S.C. 112, second paragraph. See In Ex part Lyell, 17 USPQ2d 1548 (Bd. Pat. App. & Inter. 1990) and see MPEP 2173.05(p) section II.

-Claim 4 recites the limitation "**the threshold detector**" in lines 2 and 3. There is insufficient antecedent basis for this limitation in the claim.

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

5. Claim 16 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

-In Claim 16, the feature "an electrical filter" was not described in the specification.

Claim Rejections - 35 USC § 101

6. Claims 4-10 are rejected under 35 U.S.C. 101 based on the theory that the claims is directed to neither a "process" nor a "machine," but rather embraces or overlaps two different statutory classes of invention in the alternative only. *Id.* At 1551.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 1, 2, 11-13, 15, 17, 18 and 27-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Touzni et al (US Patent No. 7,031,405) in view of Riess et al (US Patent No. 7,110,923).

Regarding claims 1, 17 and 36, referring to Figures 1-4, Touzni teaches a system for detecting digital symbols carried in a received signal, comprising:

a functional element (i.e., Matched filter 460 and Equalizer 461, Fig. 4) operative to receive a stream of samples of an electrical signal derived from the received signal and to evaluate a non-linear function of each received sample, thereby to produce a stream of processed samples (i.e., col. 7, lines 58-67, col. 8, lines 1-67 and col. 9, lines 1-67);

a detector (i.e., Symbol Decision 463 and Decoder 425, Fig. 4) operative to render decisions about individual symbols present in the received signal on the basis of

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the stream of processed samples (i.e., col. 7, lines 58-67, col. 8, lines 1-67, col. 9, lines 1-67, col. 2, lines 43-51, col. 16, lines 54-67 and col. 17, lines 1-20).

Touzni differs from claims 1, 17 and 36 in that he does not specifically teach the received signal is an optical signal. Riess, from the same field of endeavor, likewise teaches a receiver (Figures 1-5). Riess further teaches the received signal is an optical signal (i.e., col. 14, lines 50-67, col. 15, lines 1-30, and from col. 2, line 61 to col. 6, line 28). Based on this teaching, it would have been obvious to one having skill in the art at the time the invention was made to incorporate the received signal is an optical signal as taught by Riess in the system of Touzni. One of ordinary skill in the art would have been motivated to do this since allowing providing an optical communication system with high speed, high capacity and reducing the signal error.

Regarding claims 2, 18 and 29, the combination of Touzni and Riess teaches wherein the non-linear function is substantially the square root (i.e., col. 8 of Touzni, lines 46-67 and col. 9, lines 1-25 and col. 14 of Riess, lines 50-67, col. 15, lines 1-30, and from col. 2, line 61 to col. 6, line 28).

Regarding claims 11 and 27, the combination of Touzni and Riess teaches further comprising a photodetection unit operative to derive the electrical signal from the received optical signal (i.e., Fig. 5 of Riess, col. 14, lines 50-67, col. 15, lines 1-30, and from col. 2, line 61 to col. 6, line 28).

Regarding claims 12 and 13, the combination of Touzni and Riess teaches

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wherein the electrical signal derived from the received optical signal has a current proportional to the power of the received optical signal (i.e., Fig. 5 of Riess, col. 14, lines 50-67, col. 15, lines 1-30, and from col. 2, line 61 to col. 6, line 28).

Regarding claim 15, the combination of Touzni and Riess teaches a sampler operative to sample the electrical signal derived from the received optical signal, thereby to produce the samples of the electrical signal derived from the received optical signal (Fig. 4 of Touzni and Figs. 1-5 of Riess).

Regarding claims 28, 30 and 31, the combination of Touzni and Riess teaches all the aspects of the claimed invention as set forth in the rejection to claim 1 above . The combination of Touzni and Riess further teaches a training sequence of symbols (i.e., col. 3 of Touzni, lines 62-67 and col. 4, lines 1-4 and lines 34-49, and col. 7 of Riess, lines 62-67 and col. 8, lines 1-15).

Regarding claim 32, the combination of Touzni and Riess Touzni teaches wherein the sequence of symbols carried in the optical training signal is a pseudo-random noise (PN) sequence (i.e., col. 3 of Touzni, lines 62-67 and col. 4, lines 1-4 and lines 34-49, and col. 7 of Riess, lines 62-67 and col. 8, lines 1-15).

Regarding claim 33, the combination of Touzni and Riess Touzni teaches identifying comprises identifying the transmitted symbol pattern that was transmitted at a time in the past corresponding to the time it would take for a transmitted symbol to appear as a processed sample upon transmission (i.e., col. 3 of Touzni, lines 62-67 and col. 4, lines 1-4 and lines 34-49, and col. 7 of Riess, lines 62-67 and col. 8, lines 1-15).

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Regarding claim 34, the combination of Touzni and Riess Touzni teaches identifying comprises detecting a burst and identifying a transmitted symbol pattern known to occur after the burst (i.e., col. 3 of Touzni, lines 62-67 and col. 4, lines 1-4 and lines 34-49, and col. 7 of Riess, lines 62-67 and col. 8, lines 1-15).

Regarding claim 35, the combination of Touzni and Riess Touzni teaches storing a feature of the processed sample as an indication of the identified symbol pattern comprises storing the value of the sample as a threshold associated with the identified symbol pattern (i.e., col. 3 of Touzni, lines 62-67 and col. 4, lines 1-4 and lines 34-49, and col. 7 of Riess, lines 62-67 and col. 8, lines 1-15).

9. Claims 14 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Touzni et al (US Patent No. 7,031,405) in view of Riess et al (US Patent No. 7,110,923) and further in view of Sugihara et al (Pub. No.: US 2005/0105919).

Regarding claim 14, the combination of Touzni and Riess differs from claim 14 in that it fails to teach an optical filter. Sugihara, from the same field of endeavor, likewise teaches an optical receiver (Figs 1 and 5). Sugihara further teaches an optical receiver comprises an optical filter (i.e., Figures 1 and 5, page 2, paragraphs [0027]-[0032]). Based on this teaching, it would have been obvious to one having skill in the art at the time the invention was made to incorporate the optical filter as taught by Sugihara in the system of the combination of Touzni and Riess. One of ordinary skill in the art would have been motivated to do this since allowing selecting the wanted signal and eliminating the unwanted signal and reducing the signal error.

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Regarding claim 16, the combination of Touzni, Riess and Sugihara teaches an electrical filter (Fig. 1 of Sugihara).

Allowable Subject Matter


10. Claims 3-10 and 19-26 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims and overcome the 112 rejection.

Conclusion

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hanh Phan whose telephone number is (571)272-3035.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan, can be reached on (571)272-3022. The fax phone number for the organization where this application or proceeding is assigned is (571)273-8300.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)305-4700.


HANH PHAN
PRIMARY EXAMINER